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ABSTRACT

In East Los Angeles, 26 Mexican American families with children in Head Start responded to a questionnaire gathering data on birthplace, family income, occupation, individuals in the home, dietary intake and habits of the children, food buying and preparation practices, and pregnancy history of the mothers. In San Ysidro, 101 Mexican American families reported the same kinds of information. Only family descriptions and pregnancy histories are included in this report, which reflects, among other findings, that in Los Angeles 31% of the mothers and 35% of the fathers were Mexican-born while in San Ysidro 78% of the mothers and 69% of the fathers were Mexican-born; mean family size in Los Angeles and San Ysidro was 5.8 individuals and was unaffected by birthplace of parents; fathers resided in 65% of the homes in Los Angeles and in 88% of the homes in San Ysidro; fewer U.S.-born fathers were employed both in Los Angeles and San Ysidro than Mexican-born fathers; Mexican-born women appeared to be in poorer health during pregnancy than U.S.-born women; health status of the women became worse as they migrated farther north; in Los Angeles, 96% of the women received medical care during pregnancy while 93% in San Ysidro received care; more U.S.-born women failed to obtain care than Mexican-born women; more Mexican-born women had medical problems during pregnancy than did U.S.-born women; in Los Angeles, a greater percentage of Mexican-born failed to carry fetus to term than U.S.-born while in San Ysidro a higher percentage of U.S.-born women aborted; and the prematurity rates in Los Angeles and San Ysidro in both U.S.- and Mexican-born women were well below the national average. (JB)

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Migration, Culture and Health of Mexican Americans in an Acculturation Gradient[1,2]

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This ongoing research is concerned with birthplace, income, family size, dietary intake and food habits of the children, food buying and preparation practices and pregnancy history of the mothers. The geographical area covered ranges from the Mexican American border and extends to Los Angeles. The purpose of the research is to discover correlations between levels of adaptation and the formation of general adaptation syndromes evolving from the original cultural matrices and need or desire to assimilate into "core culture" of the "host" society.

The question becomes one of what is the health of the Mexican American and how does this health status change as migration and acculturation take place. In order to obtain an index of the effect of migration and acculturation on the health of Mexican Americans a Collaborative Study which involved the nutritional status of preschool children was undertaken in 1968. This paper reports correlations between levels of adaptation and the formation of general adaptation syndromes evolving from the original cultural matrices and need or desire to assimilate into "core culture" of the "host" society.

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The health and rate of acculturation should be of interest to physicians, public health officials and those who plan health change. Gladston (1) has pointed out that in this rate of acculturation or adaptation there lies the seed of a maladaptive reaction; that when it is too rapid and too extensive this reaction could be destructive to life and health. Hans Selye (2,3) discussed the general adaptation syndrome and the diseases of adaptation indicating that identifiable clinical symptoms may be found.

Mexican Americans are racially and culturally mestizos and are indigenous to or have migrated to the American Southwest. They constitute a cultural entity which is in various phases of adaptation to a changing society which is dominated by an Anglo (North Atlantic) culture-society. Many Mexican Americans live in the city of Los Angeles. Next to Mexico City, Los Angeles County has the largest Latin American population in the Western hemisphere (4).

The Mexican American represents a larger ethnic minority in Los Angeles County and the State of California than the Black population. Nationally, Mexican Americans are the country's second largest ethnic minority (5).

The present health status of Mexican Americans may be generally described as poor. The mortality and morbidity rates run two or three times higher than those for the dominant Anglo culture (6, 7). If one uses the health statistics of the East and Northeast health districts of Los Angeles where Mexican Americans comprise the ethnic majority, reportable diseases associated with poor sanitary conditions are higher than in the county as a whole. The TB rate more than doubles the county rate. The syphilis rate has more than doubled in the East and Northeast districts while the rate for the county increased 67% (7). Health data on California farm workers indicate many untreated medical conditions.

Some commonly observed disorders included skin infections , diarrhea, tonsillitis, iron deficiency anemia, and pregnancy without prenatal care. The occupational disease rate is three times higher for Mexican Americans than the state average. The perinatal mortality rate (fetal deaths and live born infants who die within 28 days) is almost 10% higher than the rest of the state. Those factors indicate the existence of serious health problems. Surprisingly there is a scarcity of hard data on the Mexican American and health statistics are almost non-existent in some areas.

The indigenous Mexican American is here to stay. The Mexican population that migrates to the United States seeking a better way of life, will not, in the foreseeable future return to Mexico. Thus, methods for preventing the acculturation syndrome and improving health status are of importance.

METHODS AND PROCEDURES

A social and demographic questionnaire developed by Aranda, et. al. (8) was used in the Preliminary Los Angeles Study of Preschool Head Start Children and their younger siblings. The questionnaire in use in the Preschool Nutrition Survey (PNS), under the direction of Dr. George N. Owen, was used with some additions in the San Ysidro study. The questionnaires were concerned with birth place, income, family size, food habits of the children, food buying and preparation practices and the pregnancy history of the mothers. Mothers recorded dietary intake of the children and blood and urine specimens were obtained for biochemical tests while physical and dental evaluations were made and medical histories were obtained.

The preliminary study was expanded for the San Ysidro study by the addition of:

1. hand-wristbone x-rays
2. dental examination with wing bite x-rays
3. anthropometric measurements
4. assessment of developmental and social behaviors
5. blood grouping and typing
6. stool examination

The geographical area covered ranges from San Ysidro, a community of San Diego, on the Mexican-American border to Los Angeles.

In 1968 the prestudies were initiated in urban Los Angeles and San Diego. In 1969-1970 the study of San Ysidro, a semi-rural border town, was developed. Field data was collected in the summer of 1970 for this study and is yet not completely analyzed. Only descriptions of families and pregancies histories are reported in this paper.

DESCRIPTION OF FAMILIES

Birthplace of Parents

As indicated in Table T, 31% of the Los Angeles mothers and 35% of the Los Angeles fathers were born in Mexico while 78% of the San Ysidro mothers and 69% of the San Ysidro fathers were born outside the United States in Mexico.

Family Size

Mean family size was 5.8 individuals (range 2-13) both in Los Angeles and San Ysidro and was unaffected by birthplace of the parents. In contrast, the average family size in the United States in 1968 was 3.7(9).

In Los Angeles, fathers resided in 65% (17) of the homes while in San Ysidro, fathers were in 88% (89) of the homes. Thus, in Los Angeles 44% (4) of the U.S. born fathers were not residing at home, while in San Ysidro 3 (11%) of U.S. born fathers were not living in the home.

Employment and Income

Eighty-nine percent (8) of the Mexican born and 67% (6) of the U.S. born fathers residing in Los Angeles were employed while in San Ysidro 72% (46) of the Mexican born and 64% (16) of U.S. born were employed. Mean weekly income of U.S. born fathers in Los Angeles was $89; of Mexican born $76. In San Ysidro U.S. born fathers earned $101 weekly while Mexican born earned $98 weekly.

In Los Angeles, fathers in 4 (80%) of the 5 families receiving welfare were U.S. born, while in San Ysidro 12 (48%) of 25 families of U.S. born fathers and 19 (30%) [illegible] families of Mexican born fathers residing at home were receiving welfare.

TABLE T

Birthplace of Mexican American Parents Studied
Residing in Los Angeles and
San Ysidro, California

Place	Mother				Father			
	Los Angeles		San Ysidro		Los Angeles		San Ysidro	
	N	%	N	%	N	%	N	%
United States	12	46	21	21	9	35	28	28
Mexico	8	31	79	78	9	35	70	69
Other	1	4	--	--	3	11	--	--
No Answer	5	19	1	1	--	--	3	3
Total	26		101				101	

PREGNANCY HISTORY OF MOTHERS

Health for Five Years Prior to Pregnancies

Twenty-five percent (2) of the Mexican born and 8% (1) of the U.S. born women residing in Los Angeles had been in poor health for 5 years prior to their pregnancies, As indicated in Table II, 16% (11) of the Mexican born and none of the U.S. born women in San Ysidro were in poor health during this period of time.

Food Restrictions During Religious Observations

In Los Angeles 5 (62%) of the Mexican born and 4 (33%) of the U.S. born women abstained from meats during religious observations, while in San Ysidro 36% of 63 Mexican born and 25% of 16 U.S. born abstained from meats during these periods.

Medical Care During Pregnancy

In Los Angeles 96% (25) of the mothers obtained medical care during pregnancy, while in San Ysidro 93% (80) received medical care. Sixteen percent (3) of U.S. born and 4% (3) of Mexican born failed to obtain care. (Table III)

In Los Angeles 77% of all women had obtained care by the end of the 4th month of pregnancy. In San Ysidro 42% (8) of the U.S. born and 75% (50) of the Mexican born had obtained care within the same time period (Table IV). The figures for all the women in Los Angeles and the Mexican born women in San Ysidro are similar to those found in a study done in Westchester County Department of Health, White Plains, New York where 3% of the women had no prenatal care and 24% had prenatal care beginning after the 4th month of pregnancy (10).

TABLE II

Health Status of 86 Mexican American Mothers
in San Ysidro for 5 Years
Prior to Pregnancy

State of Health	Total		U.S. Born		Mexican Born	
	N	%	N	%	N	%
Excellent	22	26	7	37	15	23
Good	53	62	12	63	41	61
Poor	11	12	0	0	11	16
Total	86	100	19	100	67	100

TABLE III

Month of Pregnancy Medical Care Began
for Los Angeles Mexican American Mothers

Month of Pregnancy	Number of Subjects	Cumulative %
1	2	8
2	3	19
3	10	58
4	5	77
5	1	81
6	1	85
7	3	96

TABLE IV

Month of Pregnancy Medical Care Began
for 86 Mexican American Mothers
in San Ysidro Compared by Birthplace

Month of Pregnancy	U.S. Born		Mexican Born	
	N	Cumulative %	N	Cumulative %
1	2	10	7	10
2	2	21	16	34
3	2	32	20	67
4	2	42	7	75
5	4	63	9	88
6	3	79	4	94
7	1	84	1	96
No Care	3	(16)*	3	(4)*

*Actual percentage not receiving medical care

Medical Problems During Pregnancy

In Los Angeles, all (8) of the Mexican born and 83% (10) of the U.S. born had medical problems (as ascertained by the mother) during pregnancy, while in San Ysidro 55% of Mexican born and 37% of U.S. born had medical problems (Table V). These problems were primarily vomiting, large weight gain and fluid retention.

Abortions, Stillborn and Premature Children

In Los Angeles 62% (5) of the Mexican born and 17% (2) of the U.S. born women failed to carry one fetus to term. In San Ysidro (Table VI) 17% (7) of Mexican born and 37% (7) of U.S. born women lost 41 fetuses (28 to 7 Mexican born; 17 to 7 U.S. born). Los Angeles women reported a fetal mortality rate of 9% (99 per one thousand live births) while Mexican born women in San Ysidro reported 14% (138 per one thousand) and U.S. born women in San Ysidro reported 16% (158 per thousand).

The over-all U.S. statistic for fetal loss is 1.4% (14.3 per one thousand) for white live births and 2.7% (26.8 per one thousand) for non-white live births (11). However, a more recent intensive study (12) in Greater New York indicated that 15% of pregnancies in upper middle class women terminated in fetal death.

The fetal death rate in white women was 13%; in non-white 25%. It should be noted that the study in Greater New York was extremely sophisticated with close physician care and follow-up, while In Los Angeles and San

Ysidro results are based on one question which was open to interpretation by the women who answered. In addition, the women were sensitive and responded poorly to this question with 85% (86 of 101 women) responding as noted in Table VI. One subject refused to answer questions related to pregnancy history. With these considerations in mind, it is possible that fetal loss in Mexican American women is much higher than our study indicated.

There were 2 premature births to women in Los Angeles. In San Ysidro 5% of U.S. born (1) and 14% of Mexican born (9) gave birth to premature infants. These figures of 1.1 per one hundred live births to U.S. born and 5.3 per one hundred live births to Mexican born are lower than usual premature rates of 7.4 per one hundred live births in the white and 9.6 per one hundred live births in the non-white population (11).

TABLE V

Medical Problems* Exhibited During Pregnancy
by 86 Mexican American Motehrs
in San Ysidro Compared by Birthplace

Problem	U.S. Born		Mexican Born	
	N	%	N	%
None	12	63	30	45
Vomiting	1	5	10	15
Swollen feet	0	0	8	12
Large weight gain	2	11	5	7
Other	4	21	14	21
Total	19	100	67	100

*As ascertained by mother

TABLE VI

Abortions, Stillborn and Premature Children
Born by 86 Mexican American Mothers
in San Ysidro Compared by Birthplace

	U.S. Born (19)		Mexican Born (67)	
	N of women	%	N of women	%
Abortions				
1	3	16	7	10
2	3	16	2*	3
3	0	0	3	4
4	1	5	0	0
Stillborns				
1	2	11	4	6
2	0	0	1	2
Prematures				
1	1	5	8	12
2	0	0	1	2
TOTAL	10	53	26	39

*Mother indicated induction of abortion

SUMMARY

Twenty-six Mexican American families of metropolitan East Los Angeles with children in Head Start responded to a questionnaire in English or Spanish gathering data on birthplace, family income, and occupation, individuals in the home, dietary intake and habits of the children, food buying and preparation practices, and pregnancy history of the mothers. Additionally, physical examinations, medical histories and blood and urine specimens were collected. In San Ysidro 101 Mexican American families cooperated in reporting the same kinds of information. In addition, wristbone x-rays, dental examinations, anthropometric measurements, assessment of developmental and social behavior, blood grouping and stool examination were included.

Only family descriptions and pregnancy histories are included in this report. In Los Angeles 31% of the mothers and 35% of the fathers were Mexican born while in San Ysidro 78% of mothers and 69% of fathers were Mexican born.

Mean family size in Los Angeles and San Ysidro was 5.8 individuals and was unaffected by birthplace of parents.

Fathers resided in 65% of the homes in Los Angeles; in 88% of the homes in San Ysidro.

Smaller percentages of U.S. born fathers were employed both in Los Angeles (67% U.S. born; 89% Mexican born) and San Ysidro (64% U.S. born; 72% Mexican born) than Mexican born fathers. However, weekly income of U.S. born fathers was greater, both in Los Angeles and San Ysidro. More families of U.S. born fathers were receiving welfare than families of Mexican born fathers.

Mexican born women appeared to be in poorer health status during pregnancy than U.S. born women. As they migrated farther north, health status became worse. In both Los Angeles and San Ysidro a greater percentage of Mexican born than U.S. born women observed food restrictions during religious observations.

Ninety-six percent of the women in Los Angeles received medical care while 93% in San Ysidro received care during pregnancy. More U.S. born women failed to obtain care than Mexican born. More Mexican born women had medical problems during pregnancy than did U.S. born women. A higher percentage of Mexican born in Los Angeles had medical problems than Mexican born in San Ysidro.

In Los Angeles a greater percentage of Mexican born failed to carry fetus to term than U. S. born while in San Ysidro the opposite was found with a higher percentage of U.S. born women aborting.

Prematurity rates in Los Angeles and San Ysidro in both U.S. and Mexican born women were well below the national average. However, in San Ysidro a greater percentage of Mexican born women had premature children than U.S. born women.

REMARKS

As the remaining data is analyzed, if all indices of health deteriorate - with migration north and farther from the point or origin - as indicated by health status during pregnancy, several speculations as to cause might be made:

1. Familiar, nutritious foods known to support health are no longer easily available;

2. Foods that can be afforded in the new environment are not nutritious; i.e. carbonated beverages, starchy filling foods.

3. Known nutritious foods that are available cannot now be afforded;

4. Previous food preparation methods are not changed to adapt to new foods and appliances, i.e. continue "top of stove" cooking methods as boiling and frying rather than roasting, broiling and baking methods.

5. Entrance into the barrio with its "culture of poverty" with further limitations of married women imposed by "machismo", i.e. once women enter the barrio they don't leave for social, cultural, or minor medical purposes. It almost takes a death to get them out.

6. Little or no "extended family" to rely on for aid. The extended family is of particular importance in this maternally oriented culture.

7. Inability to obtain preventive and continuing health care due to poverty, "machismo", lack of Spanish speaking physicians, etc.

The transitory nature of the population cannot be used as a cause for health deterioration with migration north since the San Ysidro population was known (13) to be for more transient than the Los Angeles Mexican American population studied (mean 12.5 years (8)).

Differences found in the 2 populations may be due to differences in subject selection. However, to obtain a better understanding of the problems encountered by Mexican Americans in the process of acculturation and migration further evaluation of the following groups is essential:

1) Mexican American migrant farm workers

2) Low income urban Mexican Americans without benefit of Head Start

3) Middle class urban Mexican Americans

A comparison of these groups should be made with similar studies conducted on Mexican Americans living in the Southwest, (14) on Mexican American migrant families in Texas (15) and Colorado, (16) and on rural and urban families in Mexico to appreciate fully the effects of migration and acculturation on health status.

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Appendix

1. Biochemical Studies

   A. Whole Blood

      1. Hgb.
      2. Hct.
      3. WBC
      4. RBC
      5. MCV
      6. MCH
      7. MCHC

   B. Serum or Plasma

      1. Total Protein (serum)
      2. Albumin (serum)
      3. Cholesterol
      4. Triglycerides
      5. Serum iron & tIBC
      6. Ascorbic Acid
      7. Vitamin A
      8. Alkaline Phosphatase
      9. Transketolase
      10. Protein Electrophoresis
      11. Urea Nitrogen

   C. Urine

      1. Creatinine
      2. Total Norurea
      3. Riboflavin
      4. Thiamine
      5. N methyinicotinamide
      6. Iodine

   D. Stool

      1. Ova and Parasites
      2. Pinworms

II. Developmental and Social Behavioral Assessment

   A. Gesell Developmental Schedules

   B. Vineland Social Maturity Scales